

(B) If the garment under test does not have a seam at least 10 inches long in the largest size in which it is produced, the following selection and testing procedure shall be followed:

(1) Select and cut specimens 8.9 cm. (3.5 in.) wide by the maximum available seam length, with the seam in the center of the specimen and extending the entire specimen length. Cut three samples (15 specimens). These specimens shall be placed in specimen holders so that the bottom edge is even with the bottom edge of the specimen holder and the seam begins in the center of the bottom edge. Prior to testing, assign each specimen to one of the three samples. All specimens cut from a single garment must be included in the same sample.

(2) Test the three samples. If all three samples pass the 17.8 cm. (7.0 in.) average char length criterion, § 1616.3(b)(1), and if three or fewer individual specimens fail by charring the entire specimen length, accept the unit. If the unit is not accepted in the above test, three samples (15 specimens) of the longest seam type shall be made using fabric and thread from production inventory and sewn on production machines by production operators. The individual fabric sections prior to sewing must be no larger than 20.3 × 63.3 cm. (8 × 25 in.) and must be selected from more than one area of the base fabric. Test the three prepared samples. Accept or reject the unit as described previously in this subsection.

(ii) *Reduced sampling.* (A) The level of sampling required for garment acceptance may be reduced provided the previous 15 units of the garments have all been accepted using the Normal Sampling Plan. The Reduced Sampling Plan shall be the same as for Normal Sampling except that the quantity of garments under test may be increased to up to two production units containing garments which have the same specific identity except for size, trim, findings, color, and print patterns as specified in paragraph (a) of this section.

(B) Select and test three samples in the same manner as in Normal Sampling. Accept or reject both units on the same basis as with Normal Sampling. Reduced Sampling shall be dis-

continued and Normal Sampling resumed if a unit is rejected.

(4) *Disposition of rejected units.* Rejected units shall not be retested, used, or promoted for use in children's sleepwear as defined in §§ 1616.2(a) and 1615.1(a) of the Standard for the Flammability of Children's Sleepwear: Sizes 0 through 6X (FF 3-71) (subpart A of part 1615 of this chapter) except after reworking to improve the flammability characteristics and subsequent retesting in accordance with the procedures set forth in *Garment production testing* [Paragraph (c)(3) of this section].

(5) *Records.* Written and physical records related to all tests performed under this Standard must be maintained by the manufacturer, importer, or other persons initially introducing items into commerce which are subject to this Standard, beginning on the effective date of this Standard. Such records shall include results of all tests, sizes of all units, and the disposition of all rejected pieces and units. Rules and regulations regarding recordkeeping may be established by the Consumer Product Safety Commission.

(d) *Compliance market sampling plan.* Sampling plans for use in market testing of items covered by this Standard may be issued by the Consumer Product Safety Commission. Such plans shall define noncompliance of a production unit to exist only when it is shown, with a high level of statistical confidence, those production units represented by tested items which fail such plans will, in fact, fail this Standard. Production units found to be noncomplying under the provisions of paragraph (d) of this section, shall be deemed not to conform to this Standard. The Consumer Product Safety Commission may publish such plans in the FEDERAL REGISTER.

(Sec. 30(d), (15 U.S.C. 2079(b)), 86 Stat. 1231)

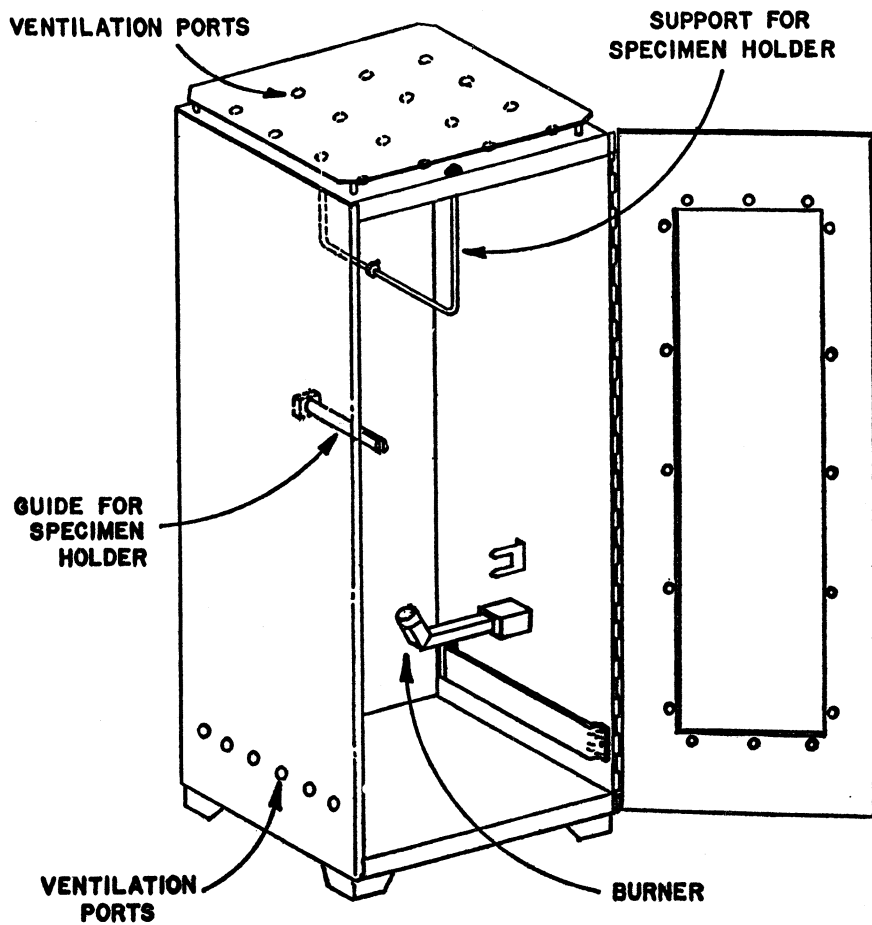
[40 FR 59917, Dec. 30, 1975, as amended at 43 FR 4855, Feb. 6, 1978]

#### § 1616.5 Test procedure.

(a) *Apparatus.* The following test apparatus shall be used for the test. Alternate test apparatus may be used only with prior approval of the Consumer Product Safety Commission.

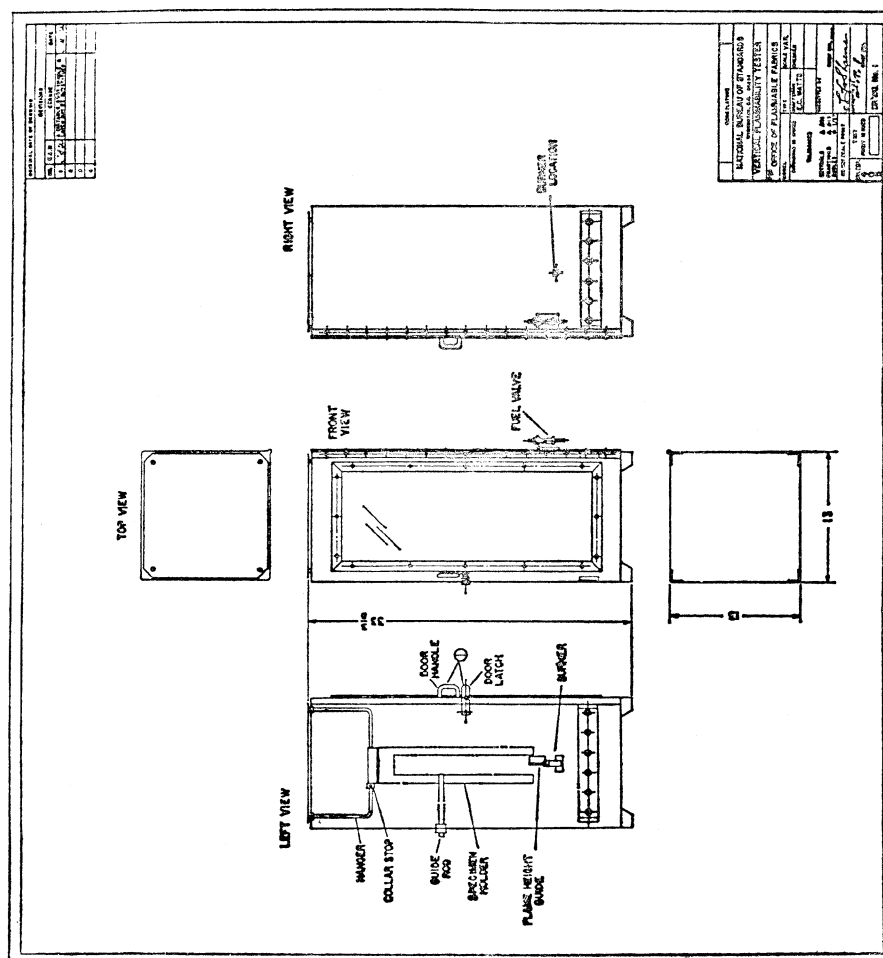
(1) *Test chamber.* The test chamber shall be a steel cabinet with inside dimensions of 32.9 cm. ( $12\frac{15}{16}$  in.) wide, 32.9 cm. ( $12\frac{15}{16}$  in.) deep and 76.2 cm. (30 in.) high. It shall have a frame which permits the suspension of the specimen holder over the center of the base of the cabinet at such a height that the bottom of the specimen is 1.7 cm. ( $\frac{3}{16}$  in.) above the highest point of the barrel of the gas burner specified in paragraph (a)(3) of this section, *Burner* and perpendicular to the front of the cabi-

net. The front of the cabinet shall be a close-fitting door with a transparent insert to permit observation of the entire test. The cabinet floor may be covered with a piece of asbestos paper, whose length and width are approximately 2.5 cm. (1 in.) less than the cabinet floor dimensions. The cabinet to be used in this test method is illustrated in Figure 1 and detailed in Engineering Drawings, Numbers 1 through 7.

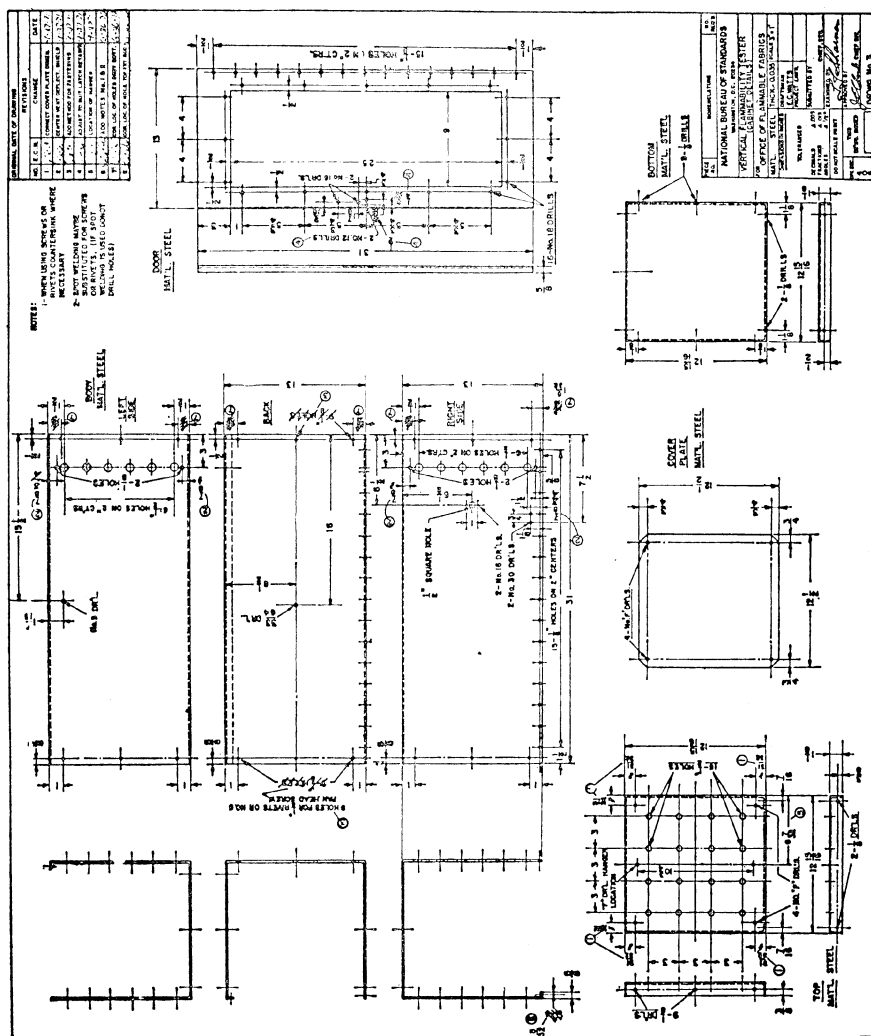


**VERTICAL TEST CABINET**

**FIGURE 1**







GENERAL USE SPECIFICATIONS		REVISIONS	
REV.	DATE	REV.	DATE
1	1-1-04	1	1-1-04
2	1-1-04	2	1-1-04
3	1-1-04	3	1-1-04
4	1-1-04	4	1-1-04
5	1-1-04	5	1-1-04
6	1-1-04	6	1-1-04
7	1-1-04	7	1-1-04
8	1-1-04	8	1-1-04
9	1-1-04	9	1-1-04
10	1-1-04	10	1-1-04
11	1-1-04	11	1-1-04
12	1-1-04	12	1-1-04
13	1-1-04	13	1-1-04
14	1-1-04	14	1-1-04
15	1-1-04	15	1-1-04
16	1-1-04	16	1-1-04
17	1-1-04	17	1-1-04
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20	1-1-04	20	1-1-04
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22	1-1-04	22	1-1-04
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35	1-1-04	35	1-1-04
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42	1-1-04	42	1-1-04
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56	1-1-04	56	1-1-04
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99	1-1-04	99	1-1-04
100	1-1-04	100	1-1-04

DOOR GLASS PANEL GUIDE (HORIZ)  
2 REQ.

DOOR GLASS PANEL GUIDE (VERT.)  
2 REQ.

DOOR LATCH  
1 REQ.

DOOR LATCH  
1 REQ.

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1 REQ.

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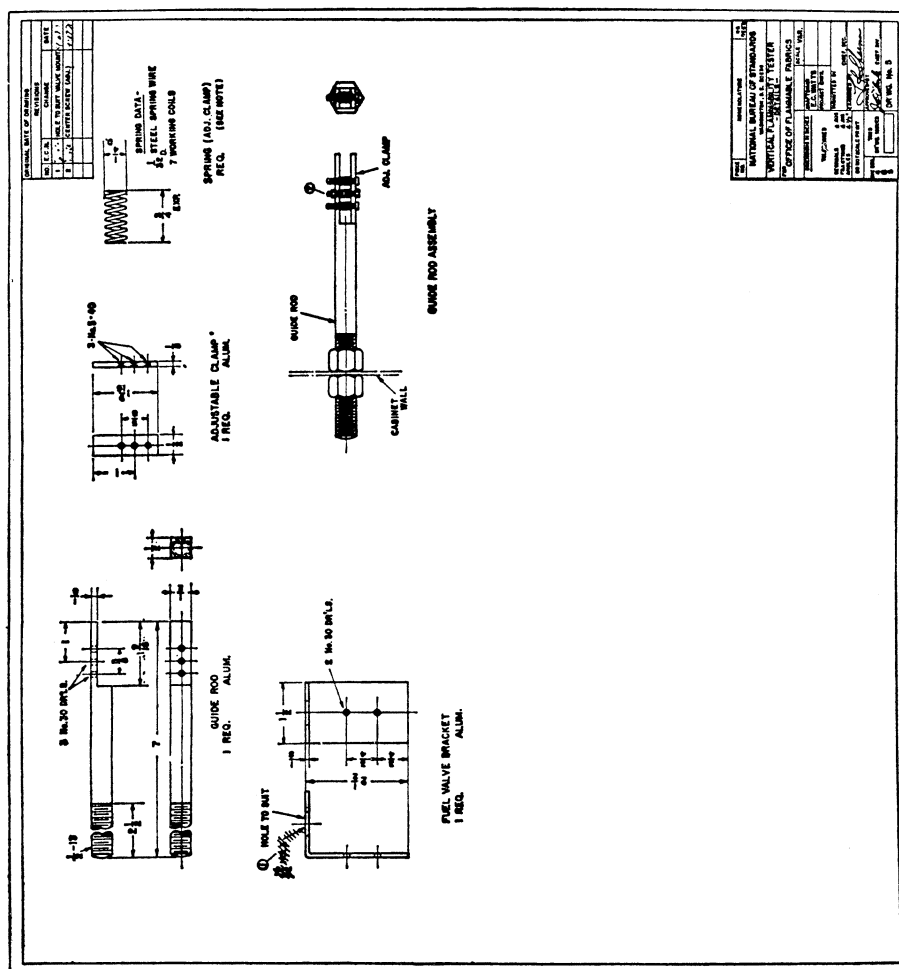
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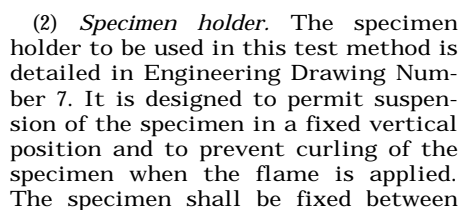
DOOR LATCH  
1 REQ.

DOOR LATCH  
1 REQ.









(3) **Burner.** The burner shall be the same as that illustrated in Figure 1 and detailed in Engineering Drawing Number 6. It shall have a tube of 1.1 cm. (0.43 in.) inside diameter. The input line to the burner shall be equipped

with a needle valve. It shall have a variable orifice to adjust the height of the flame. The barrel of the burner shall be at an angle of 25 degrees from the vertical. The burner may be equipped with an adjustable stop collar so that it may be positioned quickly under the test specimen. The burner shall be connected to the gas source by rubber or other flexible tubing.

(4) *Gas supply system.* There shall be a pressure regulator to furnish gas to the burner under a pressure of 103–259 mm. Hg. (2–5 lbs. per sq. in.) at the burner inlet. (*Caution.* Precautionary laboratory practices must be followed to prevent the leakage of methane. Methane is a flammable gas which can be explosive when mixed with air and exposed to a source of ignition, and can cause asphyxiation because of the lack of air.)

(5) *Gas.* The gas shall be at least 97 percent pure methane.

(6) *Hooks and weights.* Metal hooks and weights shall be used to produce a series of loads for char length determinations. Suitable metal hooks consist of No. 19 gauge steel wire, or equivalent, made from 7.6 cm. (3 in.) lengths of the wire, bent 1.3 cm. (0.5 in.) from one end to a 45-degree angle hook. The longer end of the wire is fastened around the neck of the weight to be used and the other in the lower end of each burned specimen to one side of the burned area. The requisite loads are given in table 1.

TABLE 1—ORIGINAL FABRIC WEIGHT <sup>1</sup>

Grams per square meter	Ounces per square yard	Loads	
		Grams	Pounds
Less than 101	Less than 3	54.4	0.12
101 to 207	3 to 6	113.4	.25
207 to 338	6 to 10	226.8	.50
Greater than 338	Greater than 10	340.2	.75

<sup>1</sup> Weight of the original fabric, containing no seams or trim, is calculated from the weight of a specimen which has been conditioned for at least 8 hr at 21±1.1 °C (70±2 °F) and 65±2 pct relative humidity. Shorter conditioning times may be used if the change in weight of a specimen in successive weighings made at intervals of not less than 2 hr does not exceed 0.2 pct of the weight of the specimen.

(7) *Stopwatch.* A stopwatch or similar timing device shall be used to measure time to 0.1 second.

(8) *Scale.* A linear scale graduated in mm. or 0.1-inch divisions shall be used to measure char length.

(9) *Circulating air oven.* A forced circulation drying oven capable of maintaining the specimen at 105±2.8 °C. (221±5 °F.), shall be used to dry the specimen while mounted in the specimen holders.<sup>3</sup>

(10) *Desiccator.* An air-tight and moisture-tight desiccating chamber shall be used for cooling mounted specimens after drying. Anhydrous silica gel with an indicator shall be used as the desiccant in the desiccating chamber. Replace or reactivate the desiccant when it becomes inactive.

(11) *Hood.* A hood or other suitable enclosure shall be used to provide a draft-protected environment surrounding the test chamber without restricting the availability of air. This enclosure shall have a fan or other suitable means for exhausting smoke and/or toxic gases produced by testing.

(12) *Extinguishing plates.* Extinguishing plates shall be used to extinguish afterglow. The plates shall be metal, approximately 35.6 cm. × 5.1 cm. (14 × 2 in.) which fit within the opening of the specimen holder. The bottom plate shall be the thickness of the specimen holder and the top plate shall be at least 0.32 cm. (1/8 in.) thick. A suitable metal specimen mounting block may be used for the bottom plate.

(b) *Mounting and conditioning of specimens.* (1) The specimens shall be placed in specimen holders so that the bottom edge of each specimen is even with the bottom of the specimen holder. Mount the specimen in as close to a flat configuration as possible. The sides of the specimen holder shall cover 1.9 cm. (3/4 in.) of the specimen width along each long edge of the specimen, and thus shall expose 5.1 cm. (2 in.) of the specimen width. The sides of the specimen holder shall be clamped with a sufficient number of clamps or shall be taped to prevent the specimen from being displaced during handling and testing. The specimens may be taped in the holders if the clamps fail to hold

<sup>3</sup> Procedure 1(1.1.1) of ASTM D 2654-71 "Standard Methods of Test for moisture content and moisture regain of textile material," describes a satisfactory oven (1972 Book of ASTM Standards, part 24, published by the American Society for Testing and Materials, 1916 Race Street, Philadelphia, Pa. 19103).

them. Place the mounted specimens in the drying oven in a manner that will permit free circulation of air at 105 °C. (221 °F.) around them for 30 minutes.<sup>4</sup>

(2) Remove the mounted specimens from the oven and place them in the desiccator for 30 minutes to cool. No more than five specimens shall be placed in a desiccator at one time. Specimens shall remain in the desiccator no more than 60 minutes.

(c) *Testing*—(1) *Burner adjustment*. With the hood fan turned off, use the needle valve to adjust the flame height of the burner to 3.8 cm. (1½ in.) above the highest point of the barrel of the burner. A suitable height indicator is shown in Engineering Drawing Number 6 and Figure 1.

(2) *Specimen burning and evaluation*.

(i) One at a time, the mounted specimens shall be removed from the desiccator and suspended in the cabinet for testing. The cabinet door shall be closed and the burner flame impinged on the bottom edge of the specimen for 3.0±0.2 seconds.<sup>5</sup> Flame impingement is accomplished by moving the burner under the specimen for this length of time, and then removing it.

(ii) When flaming has ceased, remove the specimen from the cabinet, except for specimens which exhibit afterglow. If afterglow is evident, the specimen shall be removed from the cabinet 1 minute after the burner flame is impinged on the specimen if no flaming exists at that time. Upon removal from the cabinet, the afterglow shall be promptly extinguished. The afterglow shall be extinguished by placing the specimen while still in the specimen holder on the bottom extinguishing plate and immediately covering it with the top plate until all evidence of afterglow has ceased. After removing

the specimen from the cabinet and, if appropriate, extinguishing afterglow, remove it from the holder and place it on a flat clean surface. Fold the specimen lengthwise along a line through the highest peak of the charred or melted area; crease the specimen firmly by hand. Unfold the specimen and insert the hook with the correct weight as shown in table 1 in the specimen on one side of the charred area 6.4 mm. (¼ in.) from the lower edge. Tear the specimen by grasping the other lower corner of the fabric and gently raising the specimen and weight clear of the supporting surface.<sup>6</sup> Measure the char length as the distance from the end of the tear to the original lower edge of the specimen exposed to the flame. After testing each specimen, vent the hood and cabinet to remove the smoke and/or toxic gases.

(3) *Report*. Report the value of char length, in centimeters (or inches), for each specimen, as well as the average char length for each set of five specimens.

(4) *Laundering*. (i) The procedures described under §§ 1616.4 Sampling and acceptance procedures, 1616.5(b) Conditioning and mounting of specimens, and 1616.5(c) Testing shall be carried out on finished items (as produced or after one washing and drying) and after they have been washed and dried 50 times in accordance with sections 8.2.2, 8.2.3, and 8.3.1(A) of AATCC Test Method 124-1996 "Appearance of Fabrics after Repeated Home Laundering," Technical Manual of the American Association of Textile Chemists and Colorists, vol. 73, 1997, which is incorporated by reference. Copies of this document are available from the American Association of Textile Chemists and Colorists, P.O. Box 12215, Research Triangle Park, North Carolina 27709. This document is also available for inspection at the Office of the Federal Register, 800 North Capitol Street, NW., Suite 700, Washington, DC. This

<sup>4</sup>If the specimens are moist when received, permit them to air dry in laboratory conditions prior to placement in the oven. A satisfactory preconditioning procedure may be found in ASTM D 1776-67, "Conditioning Textiles and Textile Products for Testing", (1972 Book of ASTM Standards, part 24, published by the American Society for Testing and Materials, 1916 Race Street, Philadelphia Pennsylvania 19103.)

<sup>5</sup>If more than 30 seconds elapse between removal of a specimen from the desiccator and the initial flame impingement, that specimen shall be reconditioned prior to testing.

<sup>6</sup>A figure showing how this is done is given in AATCC Test method 34-1969, "Fire Resistance of Textile Fabrics," Technical Manual of the American Association of Textile Chemists and Colorists, Vol. 46, 1970, published by AATCC, P.O. Box 12215, Research Triangle Park, North Carolina 27709.

## § 1616.6

incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Items which do not withstand 50 launderings shall be tested at the end of their useful service life with prior approval of the Consumer Product Safety Commission.

(ii) Washing shall be performed in accordance with sections 8.2.2 and 8.2.3 of AATCC Test Method 124-1996, using wash temperature V ( $60^{\circ} \pm 3^{\circ} \text{C}$ ,  $140^{\circ} \pm 5^{\circ} \text{F}$ ) specified in Table II of that method, and the water level, agitator speed, washing time, spin speed and final spin cycle specified for "Normal/Cotton Sturdy" in Table III. A maximum washer load shall be 3.64 Kg (8 pounds) and may consist of any combination of test samples and dummy pieces. Drying shall be performed in accordance with section 8.3.1(A) of that test method, Tumble Dry, using the exhaust temperature ( $66^{\circ} \pm 5^{\circ} \text{C}$ ,  $150^{\circ} \pm 10^{\circ} \text{F}$ ) and cool down time of 10 minutes specified in the "Durable Press" conditions of Table IV. Alternatively, a different number of times under another washing and drying procedure may be specified and used, if that procedure has previously been found to be equivalent by the Consumer Product Safety Commission. Such laundering is not required of items which are not intended to be laundered, as determined by the Consumer Product Safety Commission.

(iii) Items which are not susceptible to being laundered and are labeled "dry-clean only" shall be dry-cleaned by a procedure which has previously been found to be acceptable by the Consumer Product Safety Commission.

(iv) For the purpose of the issuance of a guarantee under section 8 of the act, finished sleepwear garments to be tested according to §1616.4(c) *Garment sampling*, need not be laundered or dry-cleaned provided all fabrics used in making the garments (except trim) have been guaranteed by the fabric producer to be acceptable when tested according to §1616.4(b) *Fabric sampling*.

[40 FR 59917, Dec. 30, 1975; 41 FR 1061, Jan. 6, 1976, as amended at 46 FR 63252, Dec. 31, 1981; 64 FR 34538, June 28, 1999; 64 FR 61021, Nov. 9, 1999; 65 FR 12928, Mar. 10, 2000]

## 16 CFR Ch. II (1-1-04 Edition)

### § 1616.6 Labeling requirements.

(a) All items of children's sleepwear shall be labeled with precautionary instructions to protect the items from agents or treatments which are known to cause significant deterioration of their flame resistance. If the item has been initially tested under §1616.5(c)(4) *Laundering*, after one washing and drying, it shall be labeled with instructions to wash before wearing. Such labels shall be permanent and otherwise in accordance with rules and regulations established by the Consumer Product Safety Commission.

(b) [Reserved]

[40 FR 59917, Dec. 30, 1975, as amended at 61 FR 1117, Jan. 16, 1996]

## Subpart B—Rules and Regulations

AUTHORITY: Sec. 5, 67 Stat. 112-13, as amended 81 Stat. 571; 15 U.S.C. 1194.

### § 1616.31 Labeling, recordkeeping, retail display and guaranties.

(a) *Definitions*. For the purpose of this section, the following definitions apply:

(1) *Standard* means the Standard for the Flammability of Children's Sleepwear: Sizes 7 through 14 (FF 5-74) (subpart A of part 1616 of this chapter) promulgated by the Consumer Product Safety Commission in the FEDERAL REGISTER of May 1, 1974 (39 FR 15214), and amended in the FEDERAL REGISTER of March 21, 1975 (40 FR 12811) (correction notice published for technical reasons on March 27, 1975, 40 FR 13547).

(2) *Children's sleepwear* means "children's sleepwear" as defined in §1616.2(a) of the Standard, that is, "any product of wearing apparel size 7 through 14, such as nightgowns, pajamas, or similar or related items, such as robes, intended to be worn primarily for sleeping or activities related to sleeping. Diapers and underwear are excluded from this definition."

(3) *Item* means "item" as defined in §1616.2(c) of the Standard, that is, "any product of children's sleepwear or any fabric or related material intended or promoted for use in children's sleepwear."

(4) *Market or handle* means any one or more of the transactions set forth in